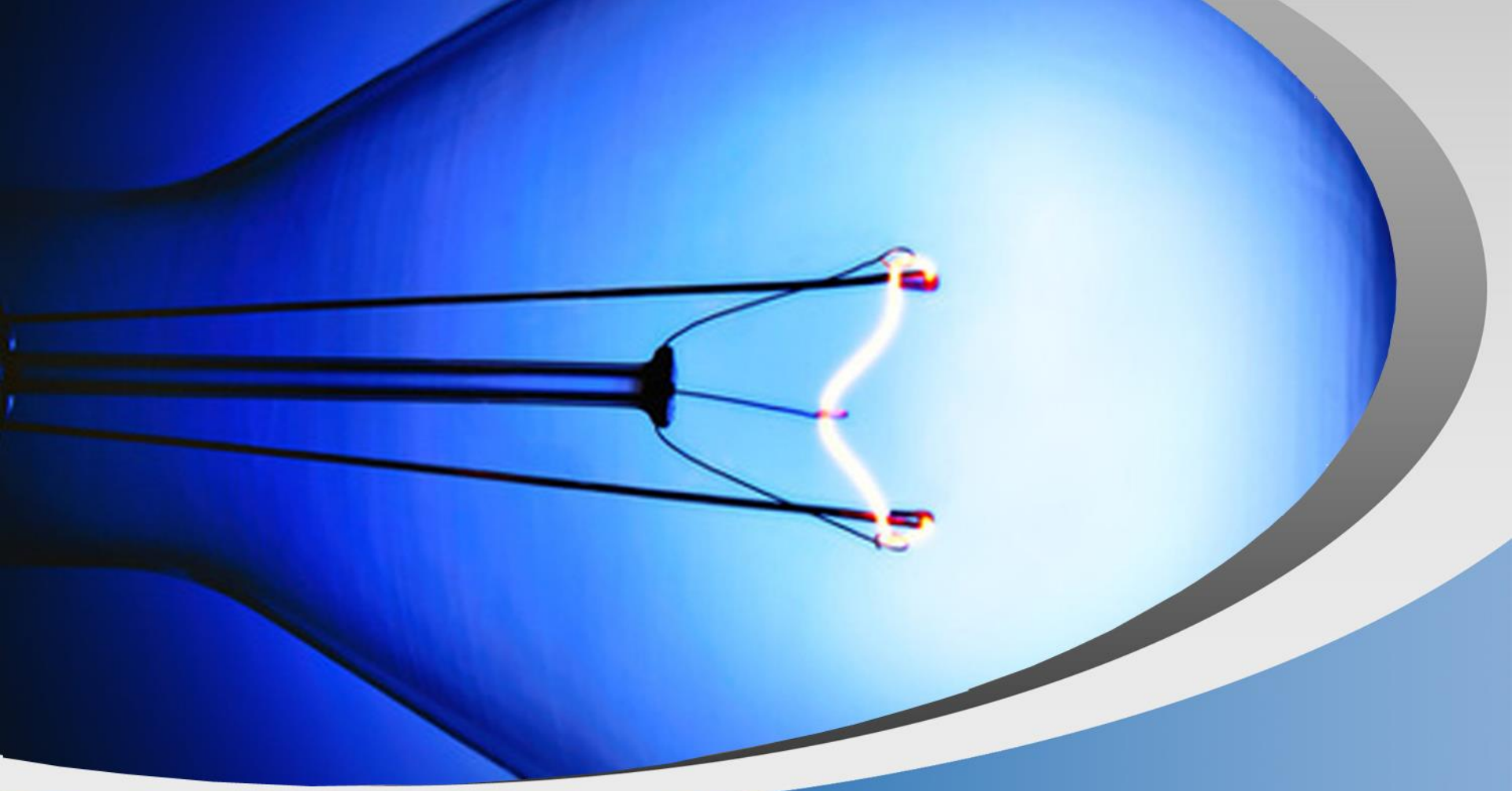

SystemC CCI WG
Parameter Information

P V S Phaneendra, CircuitSutra Technologies Pvt. Ltd.
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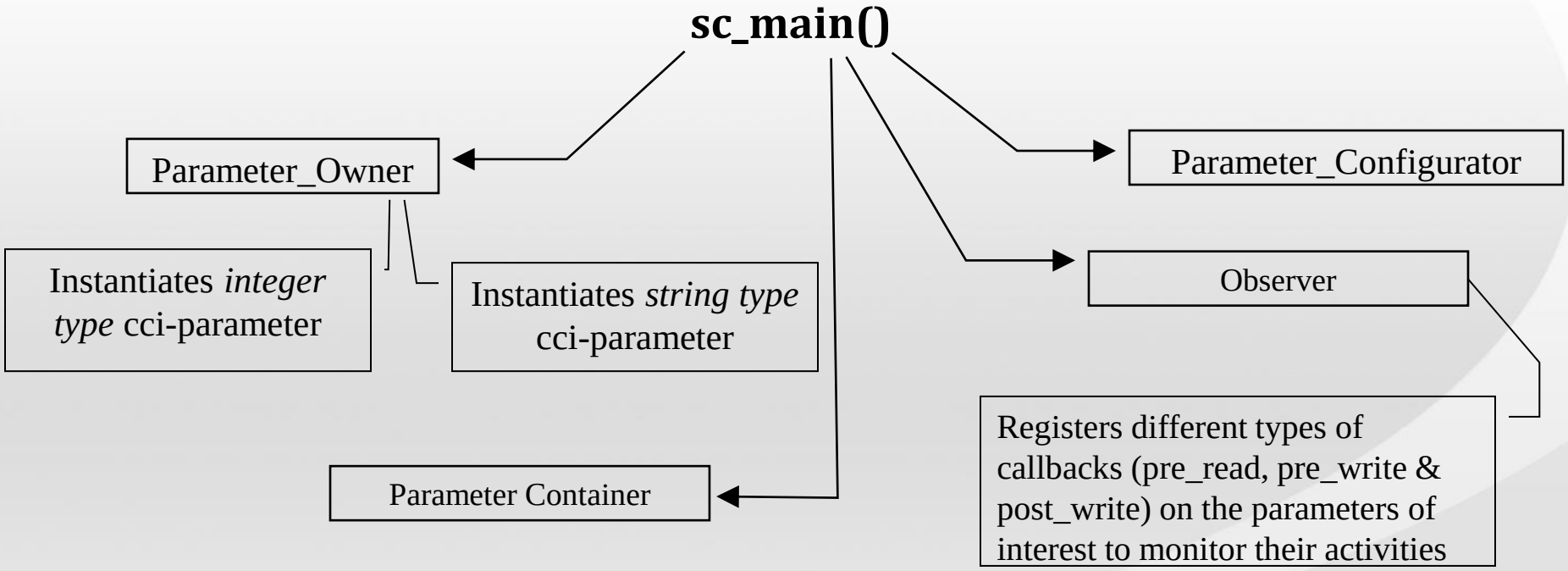
accellera
SYSTEMS INITIATIVE

Set and Query Various Attributes of a CCI Parameter

- **The following functionality have been demonstrated in this example :**
  - Setting and querying
    - Parameter's name
    - Parameter's value
    - Parameter's description/documentation/meta-data
    - Parameter's value validity
    - Parameter's locked status
    - Parameter's value origin

Set and Query Parameter Information



Note#1 : *For a detailed understanding of registration and implementation of callbacks, please go see examples 8, 11 and 12.*

Within the Callbacks implementation :

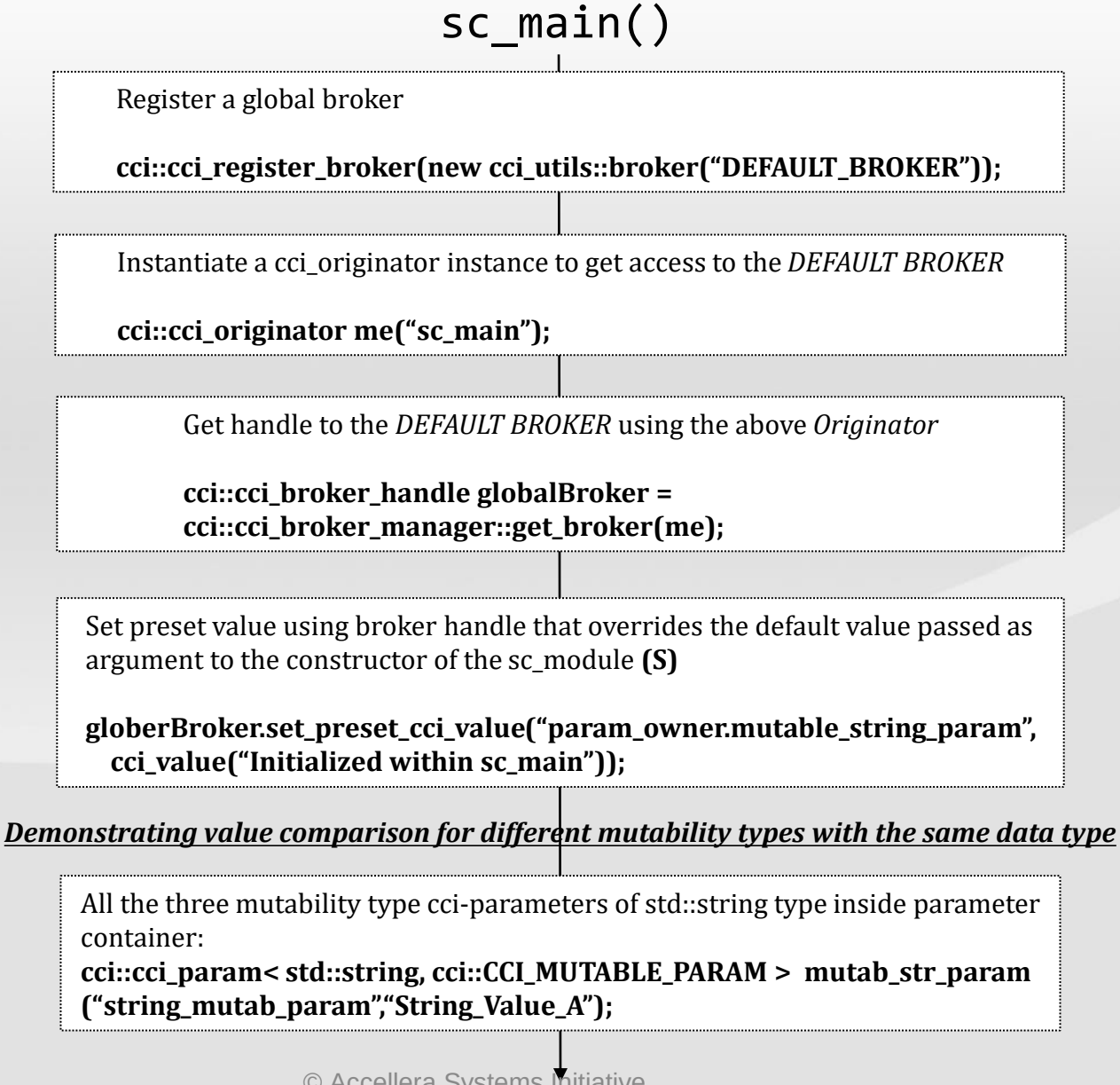
Name of the parameter : *callback_event.name();*

Name of the originator : *callback_event.originator.name();*

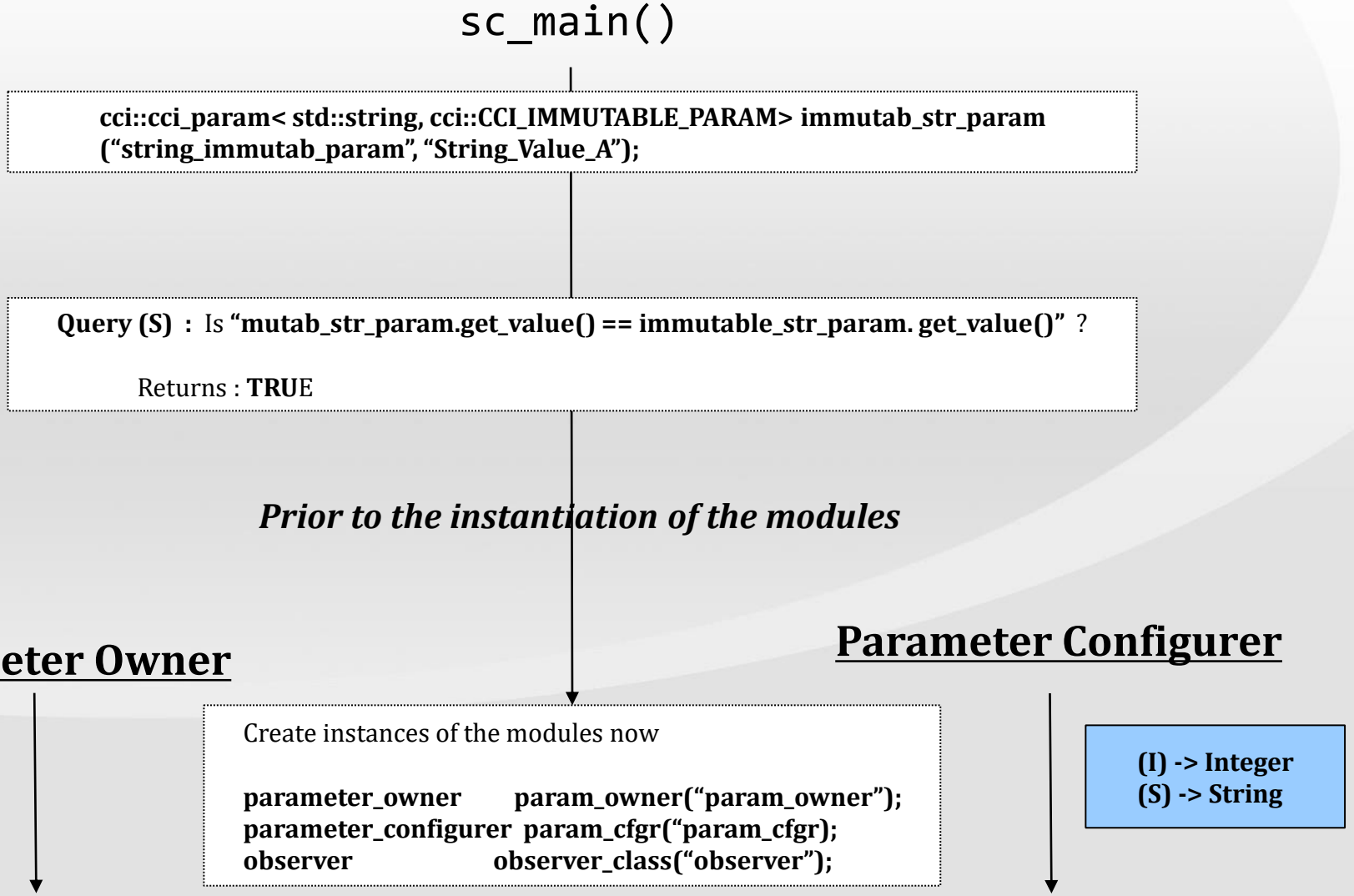
Note#2 : *The originator information will be displayed by the following* ***Shape***

Reporter : *Observer*
Callback Type : *cb_type*
Originator : *originator_name*

Set and Query Parameter Information (1)



Set and Query Parameter Information (2)



Set and Query Parameter Information (3)

Parameter Owner

cci::cci_param<int> int_param;
cci::cci_param<std::string> string_param;

Set name and assign default value **(I)** :

int_param("mutable_int_param, 0);

Set name and assign default value **(S)** :

string_param("mutable_string_param", "Default_value");

Query **(I) : int_param.is_preset_value()** returns **FALSE**

Query default value **(I)** :

int_param.get_default_value();
Returns Value = 0;

Set documentation **(I)** :

const std::string init_doc =
"This is a mutable type integer parameter";
int_param.set_documentation(init_doc);

Prior to 0ns

Parameter Configurer

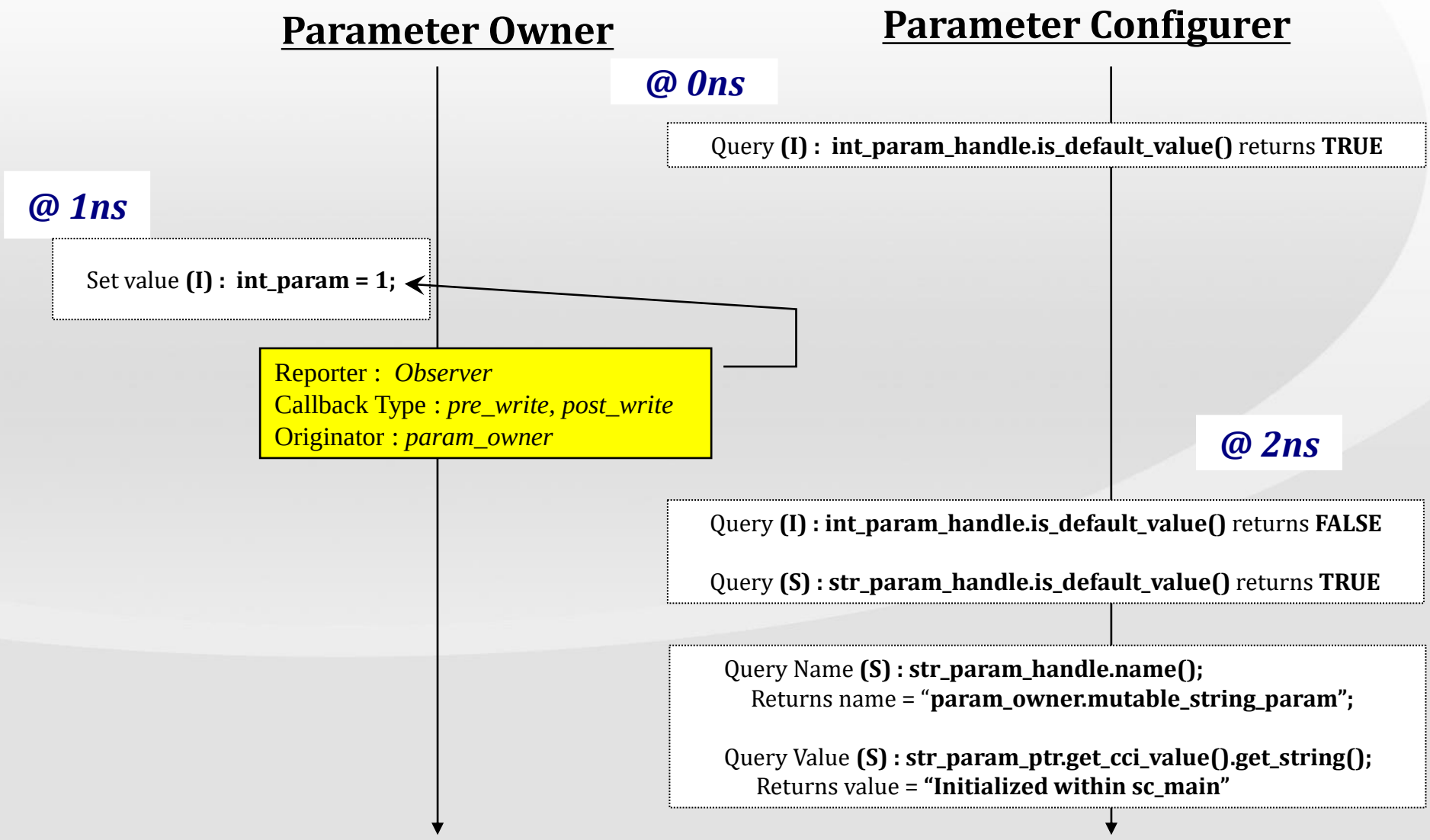
Declare base pointers and check the existence of the integer and string type parameters:

cci::cci_param_handle int_param_handle; **(I)**
cci::cci_param_handle str_param_handle; **(S)**

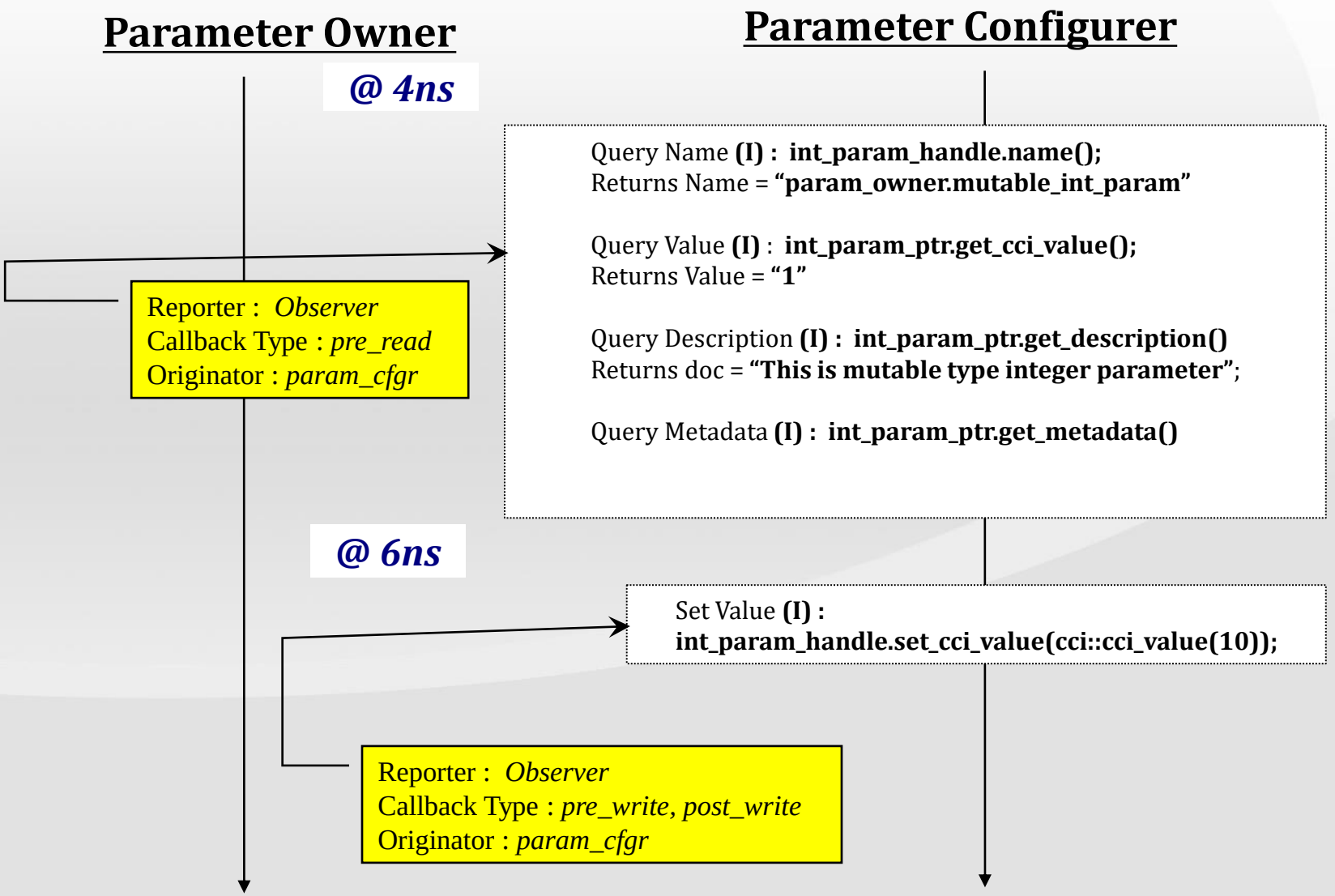
Query **(S) : str_param_ptr->is_preset_value()** returns **TRUE**

(I) -> Integer
(S) -> String

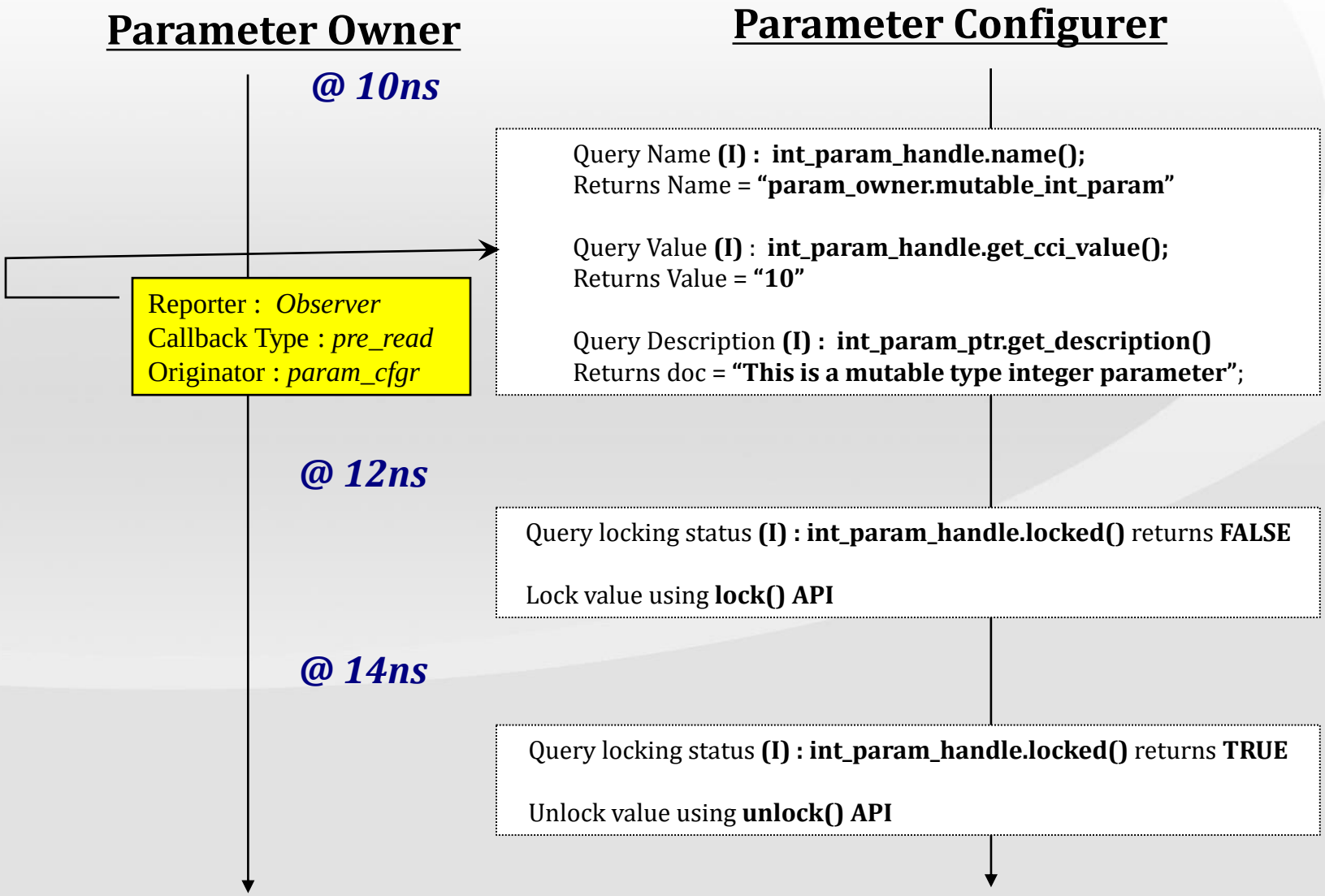
Set and Query Parameter Information (4)



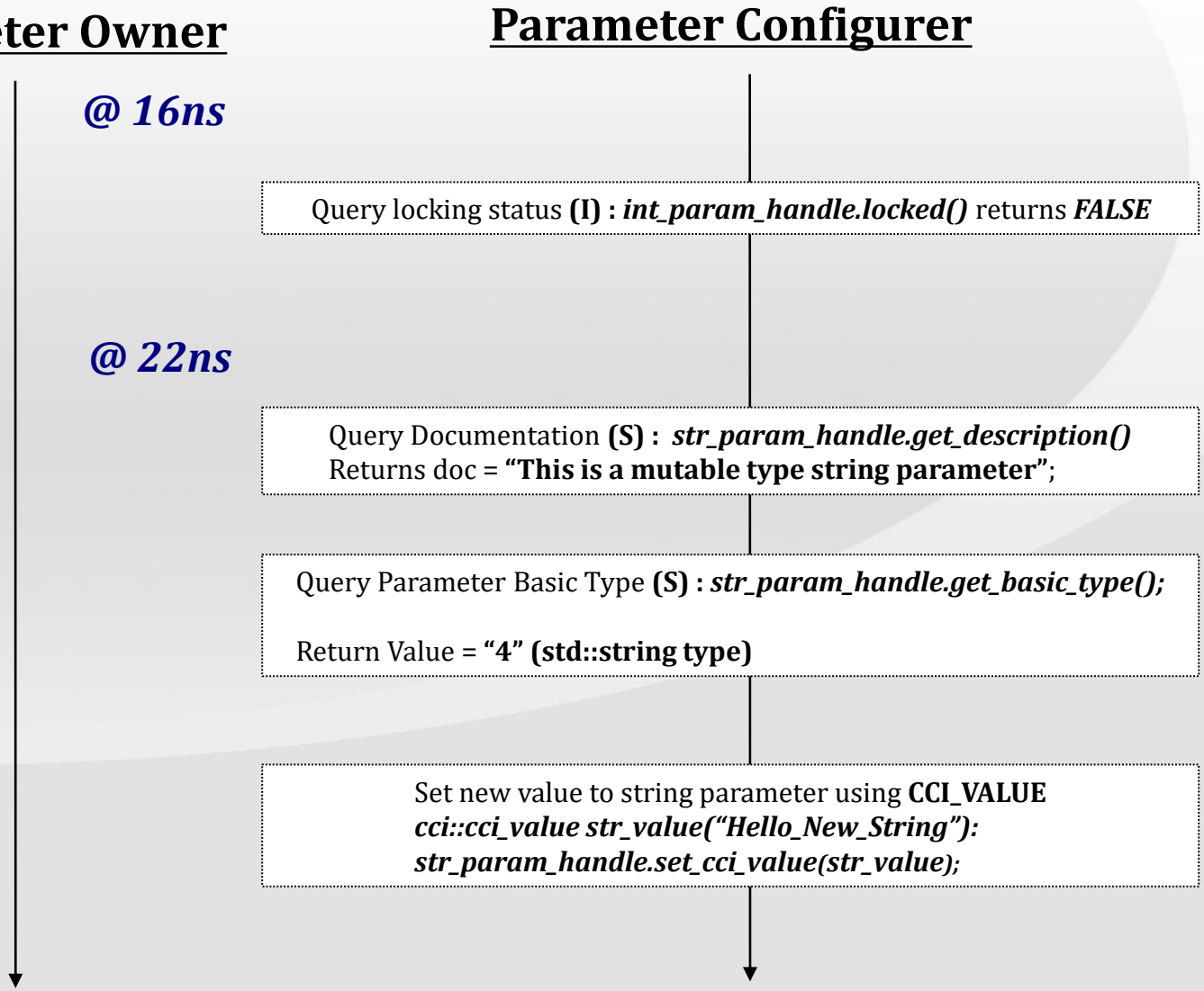
Set and Query Parameter Information (5)



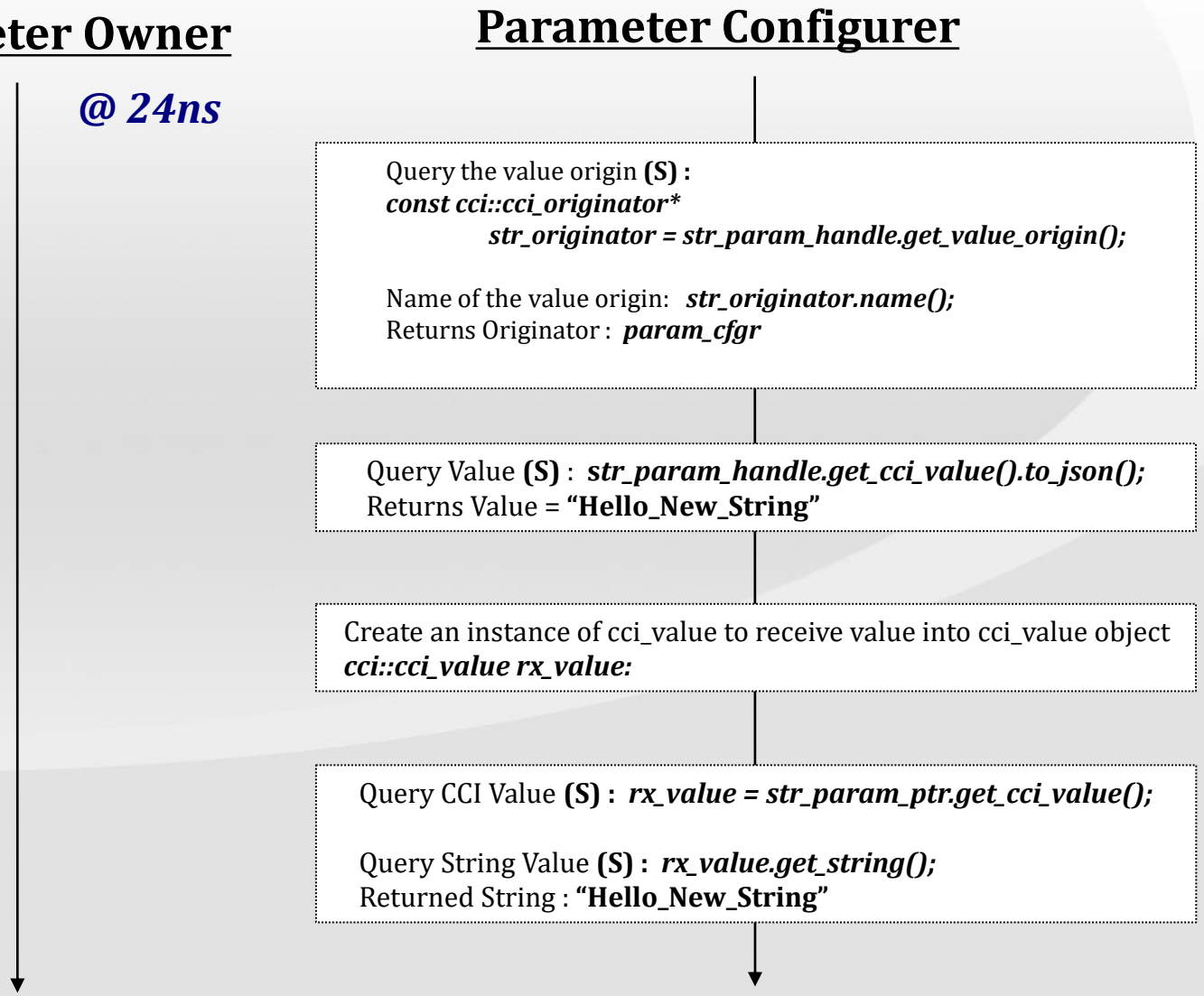
Set and Query Parameter Information (6)



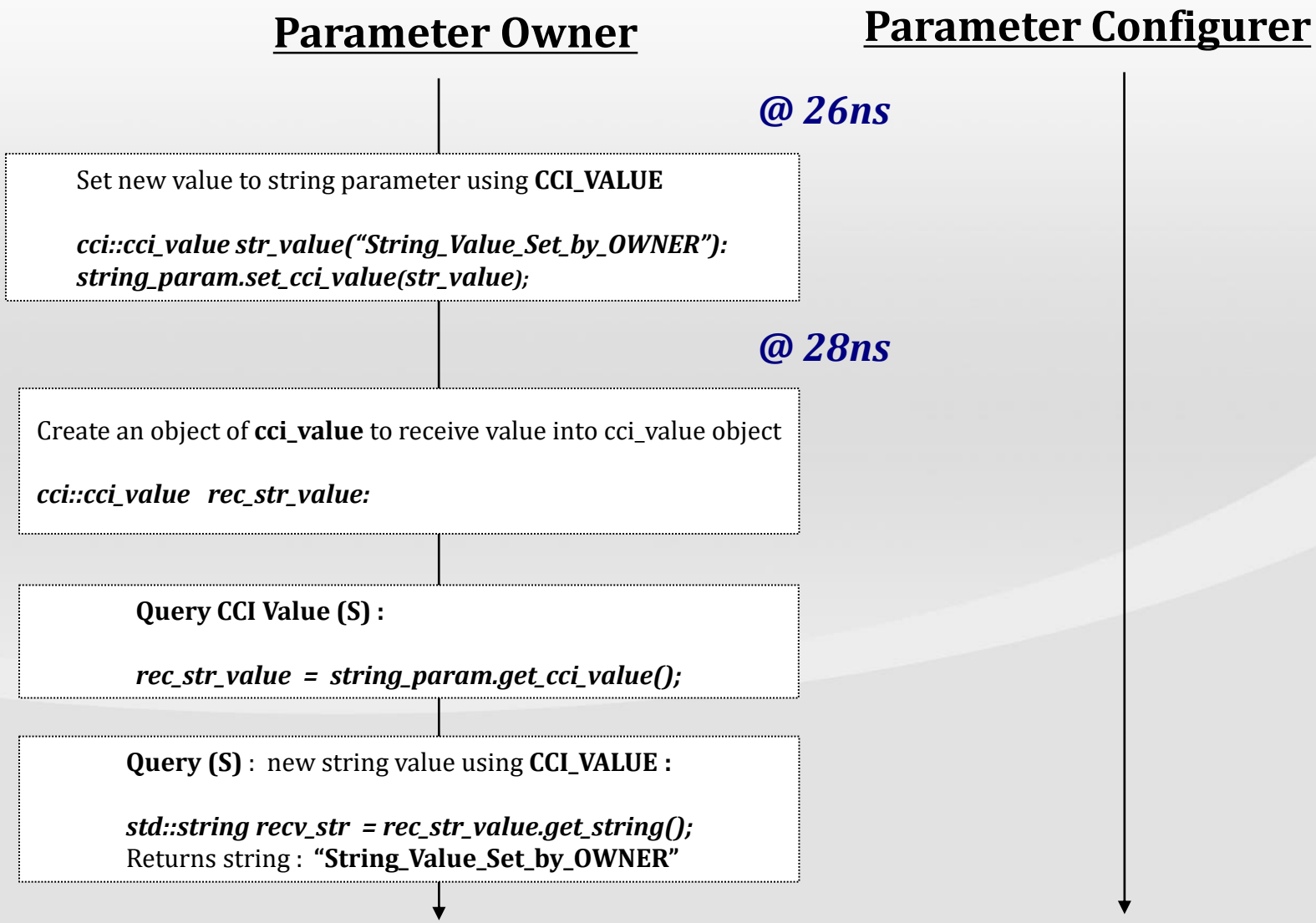
Set and Query Parameter Information (7)



Set and Query Parameter Information (8)



Set and Query Parameter Information (9)



Expected Output
(ex07_Parameter_Information.log)

```
SystemC Simulation
Info: sc_main: [MAIN] : Setting 'param_owner.mutable_string_param' value to 'Initialized within
sc_main()'
Info: sc_main: [MAIN] : Demonstrating 'comparison' between the values of a data type for different
mutability types
Info: sc_main: [MAIN] : 'mutable' & 'immutable' type String parameters - VALUES MATCH
Info: sc_main: [MAIN] : parameter_owner module declares two cci type parameters.
Info: sc_main: One is of 'Integer type' and the other is of 'String type'
Info: sc_main: 'Integer type' has 'pre_read', 'pre/post_write' callback registered within the
OBSERVER
Info: param_owner: @0 s, Prior to 0 s demonstrating 'is_preset_value' API
Info: param_owner: @0 s, [OWNER] : Parameter : param_owner.mutable_int_paramValue : 0
Info: param_owner: @0 s, Is preset value ?  false
Info: param_owner: @0 s, Prior to 0 s demonstrating 'get_default_value()'
Info: param_owner: @0 s, [OWNER -> Retrieve] : Parameter name  : param_owner.mutable_int_param
Info: param_owner: @0 s, [OWNER -> Retrieve] : Using 'get_default_value()' : 0
```

Cont'd

```
Info: param_owner: @0 s, [OWNER -> Set] : Param description - 'This is a mutable type integer
parameter'

Info: param_cfgr: @0 s, [CFGR C_TOR] : Broker Type : DEFAULT_BROKER - is not a private broker.

Info: param_cfgr: @0 s, Prior to 0 s  demonstrating 'is_preset_value' API

Info: param_cfgr: @0 s, [CFGR C_TOR] : param_owner.mutable_string_param     Preset Value :
Initialized within sc_main

Info: param_cfgr: @0 s, [CFGR C_TOR] : Is preset value ?    true

Info: observer: @0 s, [OBSERVER C_TOR] : Broker Type : DEFAULT_BROKER- is not a private broker.

Info: sc_main: Begin Simulation

Info: param_cfgr: @0 s, @ 0 s    demonstrating 'is_default_value()'

Info: param_cfgr: @0 s, [CFGR] : param_owner.mutable_int_param default value hasn't been modified.

Info: param_cfgr: @0 s, [CFGR] : Is Default Value ?   Returned status : true

Info: param_owner: @1 ns, @ 1 ns

Info: param_owner: @1 ns, [OWNER -> Set] : Overriding default value of param_owner.mutable_int_param
to 1

Info: observer: @1 ns, [OBSERVER pre_write_cb] :  Parameter Name : param_owner.mutable_int_param
     Originator info : param_owner

Info: observer: @1 ns, [OBSERVER post_write_cb] :  Parameter Name : param_owner.mutable_int_param
     Originator info : param_owner

Info: param_cfgr: @2 ns, @ 2 ns  demonstrating 'is_default_value()'
```

Cont'd

```
Info: param_cfgr: @2 ns, [CFGR] : param_owner.mutable_int_param value has been modified.

Info: param_cfgr: @2 ns, [CFGR] : Is Default Value ?  Returned status : false

Info: param_cfgr: @2 ns, [CFGR] : param_owner.mutable_string_param New Value : Initialized within
sc_main

Info: param_cfgr: @4 ns, [CFGR -> Retrieve] Parameter's name : param_owner.mutable_int_param

Info: observer: @4 ns, [OBSERVER pre_read_cb] :  Parameter Name : param_owner.mutable_int_param
     Originator info : param_cfgr

Info: param_cfgr: @4 ns, [CFGR -> Retrieve] Parameter's value : 1

Info: param_cfgr: @4 ns, [CFGR -> Retrieve] Parameter's desc : This is a mutable type integer
parameter

Info: param_cfgr: @4 ns, [CFGR -> Retrieve] Parameter's metadata : {"min_value":["0","Minimum
value"],"max_value":["100","Maximum value"],"unit":["F","Unit of the parameter (Farad)"]}

Info: param_cfgr: @6 ns, @ 6 ns

Info: param_cfgr: @6 ns, [CFGR -> Set] :  param_owner.mutable_int_param value to 10

Info: observer: @6 ns, [OBSERVER pre_write_cb] :  Parameter Name : param_owner.mutable_int_param
     Originator info : param_cfgr

Info: observer: @6 ns, [OBSERVER post_write_cb] :  Parameter Name : param_owner.mutable_int_param
     Originator info : param_cfgr

Info: param_cfgr: @10 ns, @ 10 ns
```

Cont'd

```
Info: param_cfgr: @10 ns, [CFGR -> Retrieve] : Parameter name : param_owner.mutable_int_param

Info: observer: @10 ns, [OBSERVER pre_read_cb] :  Parameter Name : param_owner.mutable_int_param
     Originator info : param_cfgr

Info: param_cfgr: @10 ns, [CFGR -> Retrieve] : Parameter value: 10

Info: param_cfgr: @10 ns, [CFGR -> Retrieve] : Parameter desc : This is a mutable type integer
parameter

Info: param_cfgr: @12 ns, @ 12 ns

Info: param_cfgr: @12 ns, [CFGR] : Checking locked status of parameter

Info: param_cfgr: @12 ns, [CFGR] : param_owner.mutable_int_param is in unlocked state!!

Info: param_cfgr: @12 ns, [CFGR] : Parameter locked using password

Info: param_cfgr: @14 ns, @ 14 ns

Info: param_cfgr: @14 ns, [CFGR] : Checking locked status of parameter

Info: param_cfgr: @14 ns, [CFGR] : param_owner.mutable_int_param is in locked state!!

Info: param_cfgr: @14 ns, [CFGR] : Parameter unlocked using password

Info: param_cfgr: @16 ns, @ 16 ns

Info: param_cfgr: @16 ns, [CFGR] : Checking locked status of parameter

Info: param_cfgr: @16 ns, [CFGR] : param_owner.mutable_int_param is in unlocked state!!

Info: param_cfgr: @22 ns, @ 22 ns     demonstrating 'set_value()' for string-type param using
cci_value
```

Cont'd

```
Info: param_cfgr: @22 ns, [CFGR] : Parameter Description : This is a mutable type string parameter

Info: param_cfgr: @22 ns, [CFGR -> Set] : Get Basic Type using 'get_basic_type()' : 4

Info: param_cfgr: @24 ns, @ 24 ns demonstrating 'get_value_origin' API

Info: param_cfgr: @24 ns, [CFGR] : Originator for the latest write on string type cci-parameter :
param_cfgr

Info: param_cfgr: @24 ns, @ 24 ns demonstrating 'get_value' for string-type param using cci_value

Info: param_cfgr: @24 ns, [CFGR] : 'Retrieve1' using 'json_serialize' and 'Retrieve2' using
'get_value()'

Info: param_cfgr: @24 ns, [CFGR -> Retrieve1] : param_owner.mutable_string_param value is
"Hello_New_String"

Info: param_cfgr: @24 ns, [CFGR -> Retrieve2] : Hello_New_String

Info: param_owner: @26 ns, @ 26 ns    demonstrating setting values by OWNER using cci_value

Info: param_owner: @26 ns, [OWNER -> Set] : New String Value : 'String_Value_Set_by_OWNER

Info: param_owner: @28 ns, @ 28 ns    demonstrating retrieving values by OWNER using cci_value

Info: param_owner: @28 ns, [OWNER -> Retrieve] : Receive str_value using 'cci_value' :
String_Value_Set_by_OWNER

Info: sc_main: End Simulation
```